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John M Dusel* (jmd@math.ucr.edu), University of California, Riverside, Department of Mathematics, Riverside, CA 92521. *Balanced parabolic quotients and branching rules for Demazure crystals.*

We study a subset of a parabolic quotient in a simply-laced Weyl group W —stable under an automorphism σ —which we call the balanced parabolic quotient. This subset relates the branching rule for a Levi subalgebra, Demazure modules, and σ -invariant weight spaces in σ -stable simple modules for the corresponding Lie algebra; and its Hasse diagram under the Bruhat order is a forest with a remarkable self-similarity property. We characterize an element of a balanced quotient on the level of the root system of W , and find that the subalgebras of the Borel associated with these elements decompose into the direct sum of two subalgebras: one contained in the Borel for a Levi subalgebra, and another consisting of σ -invariants. (Received February 15, 2015)